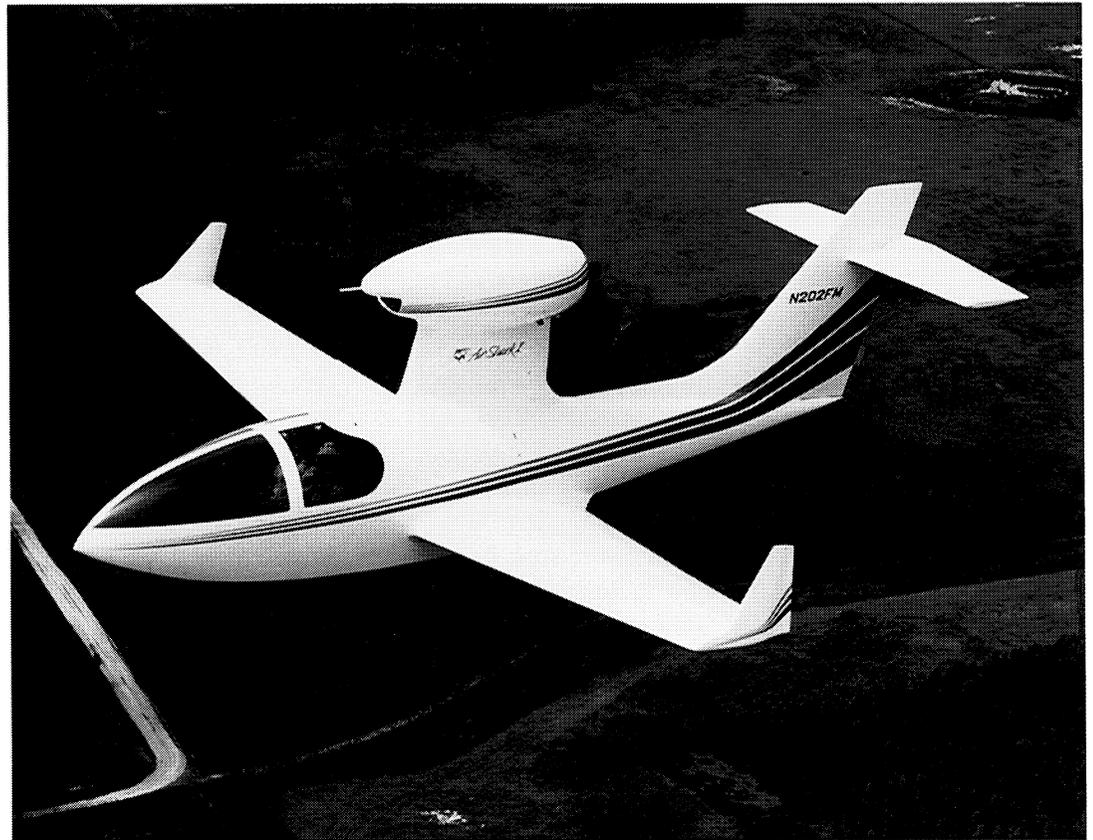


The airplane pictured is the new Air Shark I, a four-place amphibian that makes extensive use of composite materials and cruises at close to 200 miles per hour under power from a 200-horsepower engine. Air Shark I is a "homebuilt" airplane, assembled from a kit of parts and components furnished by Freedom Master Corporation, Satellite Beach, Florida. The airplane incorporates considerable NASA technology and its construction benefited from research assistance provided by Kennedy Space Center (KSC).

In designing the Shark, company president Arthur M. Lueck was able to draw on NASA's aeronautical technology bank through KSC's computerized "recon" library. As a result of his work at KSC, the wing of the Air Shark I is a new airfoil developed by Langley Research Center for light aircraft. In addition, Lueck opted for NASA-developed "winglets," vertical extensions of the wing that reduce drag by smoothing air turbulence at the wingtips. The NASA technology bank also contributed to the hull design. Lueck is considering application of NASA laminar flow technology—means of smoothing the airflow over



wing and fuselage—to later models for further improvement of the Shark's aerodynamic efficiency.

A materials engineer, Lueck employed his own expertise in designing and selecting the materials for the composite segments, which include all structural members, exposed surfaces and many control components. The materials are fiber reinforced plastics, or FRP. They offer a high

strength-to-weight ratio, with a nominal strength rating about one and a half times that of structural steel. They provide other advantages: the materials can be easily molded into finished shapes without expensive tooling or machining, and they are highly corrosion resistant. The first homebuilt to be offered by Freedom Master, Air Shark I completed air and water testing in mid-1985 and the company launched production of kits. ▲